

- Net income (loss) is expected to be between \$(1.5) million and \$(2.5) million, representing an improvement of \$12.9 million to \$11.9 million compared to net income (loss) of \$(14.4) million for the second quarter of 2013. This year over year increase was driven primarily by revenue growth, a favorable sales mix affecting gross margin and reduced research and development, or R&D, expense relating to the strategic shift in our R&D program, while reflecting higher levels of marketing expenses during the first half of 2014.
- Adjusted EBITDA is expected to be between \$15.0 million and \$16.0 million, representing an increase of \$8.3 million to \$9.3 million compared to \$6.7 million for the second quarter of 2013. This year over year increase was driven primarily by revenue growth, a favorable sales mix affecting gross margin and reduced R&D expense relating to our strategic shift in our R&D program, while reflecting higher levels of marketing expenses during the first half of 2014.

Adjusted EBITDA is a financial measure that is not calculated in accordance with GAAP. For a discussion of our presentation of Adjusted EBITDA, see footnote (3) of “—Summary Consolidated Financial and Other Data” beginning on page 14 of this prospectus.

### **Implications of Being an Emerging Growth Company**

As a company with less than \$1 billion in revenue during our last fiscal year, we qualify as an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012, as amended, or the JOBS Act. An emerging growth company may take advantage of specified reduced reporting and other regulatory requirements for up to five years that are otherwise applicable generally to public companies. These provisions include, among other matters:

- exemption from the auditor attestation requirement on the effectiveness of our system of internal control over financial reporting;
- exemption from compliance with any new requirements adopted by the Public Company Accounting Oversight Board requiring mandatory audit firm rotation or a supplement to the auditor’s report in which the auditor would be required to provide additional information about the audit and the financial statements of the issuer;
- exemption from the requirement to seek non-binding advisory votes on executive compensation and golden parachute arrangements; and
- reduced disclosure about executive compensation arrangements.

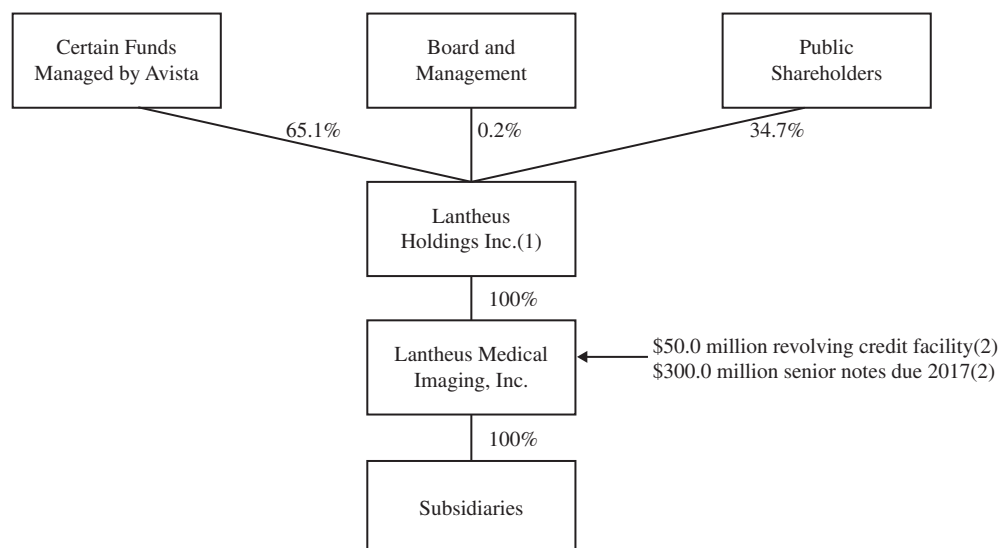
We will remain an emerging growth company for five years unless, prior to that time, we have (i) more than \$1 billion in annual revenue, (ii) have a market value for our common stock held by non-affiliates of more than \$700 million as of the last day of our second fiscal quarter of the fiscal year when a determination is made that we are deemed to be a “large accelerated filer,” as defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934, as amended, or the Exchange Act, or (iii) issue more than \$1 billion of non-convertible debt over a three-year period. We have availed ourselves of the reduced reporting obligations with respect to executive compensation disclosure in this prospectus, and expect to continue to avail ourselves of the reduced reporting obligations available to emerging growth companies in future filings.

In addition, Section 107 of the JOBS Act also provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, or the Securities Act, for complying with new and revised accounting standards. An emerging growth company can, therefore, delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. However, we are choosing to “opt out” of that extended transition period and, as a result, we

## Corporate Reorganization

After the effectiveness of the registration statement of which this prospectus forms a part and prior to the consummation of this offering, we will effect a corporate reorganization, whereby our direct, wholly-owned subsidiary, Lantheus MI Intermediate, Inc. (the direct parent of LMI) will merge with and into us, and we will be the surviving entity of the merger, and each share of our common stock outstanding immediately prior to the merger (other than shares held in treasury) will be converted into the right to receive 0.355872 shares of our newly issued common stock, with any fractional shares rounded down, and shares held in treasury will be cancelled and retired. In addition, as part of our corporate reorganization, shares of our common stock underlying stock options outstanding immediately prior to the merger will be ratably adjusted, and certain unvested performance-vesting stock options will be amended (see “Executive and Director Compensation—Outstanding Incentive Awards and Anticipated Awards in Connection with this Offering”). The corporate reorganization will not affect our operations, which we will continue to conduct through our operating subsidiaries, including LMI.

The diagram below reflects a simplified overview of our organizational structure following the corporate reorganization and this offering (including the application of the net proceeds therefrom):



- (1) Guarantor of LMI’s \$50.0 million revolving credit facility and \$300.0 million of LMI’s 9.750% senior notes due 2017, or the Notes.
- (2) For a description of our revolving credit facility and the Notes, see “Description of Material Indebtedness—Revolving Credit Facility” and “Description of Material Indebtedness—Senior Notes.”

## History and Principal Stockholder

Founded in 1956 as New England Nuclear Corporation, our medical imaging business was purchased by E. I. du Pont de Nemours and Company, or DuPont, in 1981. Bristol-Myers Squibb Company, or BMS, subsequently acquired our medical imaging business from DuPont as part of its acquisition of DuPont Pharmaceuticals in 2001. In January 2008, Avista Capital Partners, L.P., Avista Capital Partners (Offshore), L.P. and ACP-Lantern Co-Invest, LLC, or collectively Avista, formed Lantheus Holdings and its subsidiary, Lantheus Intermediate, and, through Lantheus Intermediate, acquired our medical imaging business from BMS, or the Acquisition, in an entity which is now known as LMI. After this offering, Avista is expected to collectively own approximately 65.1% of our outstanding common stock.

## SUMMARY CONSOLIDATED FINANCIAL AND OTHER DATA

The following tables set forth our summary consolidated financial and other data for the periods ended and as of the dates indicated. The summary consolidated statements of operations data for each of the three fiscal years in the period ended December 31, 2013 have been derived from our audited consolidated financial statements and related notes included elsewhere in this prospectus. The summary consolidated balance sheet data as of March 31, 2014 and statements of operations data for the three months ended March 31, 2014 and 2013 have been derived from our unaudited consolidated financial statements and related notes included elsewhere in this prospectus. We have prepared the unaudited consolidated financial information set forth below on the same basis as our audited consolidated financial statements and have included all adjustments, consisting of only normal recurring adjustments, that we consider necessary for a fair presentation of our financial position and operating results for such periods. The results for any interim period are not necessarily indicative of the results that may be expected for a full year.

The summary consolidated financial data set forth below and elsewhere in this prospectus are not necessarily indicative of our future performance. You should read this information together with “Capitalization,” “Selected Consolidated Financial Data,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes thereto included elsewhere in this prospectus.

For a discussion on our quarterly results of operations for 2014 and 2013, see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Quarterly Results of Operations.”

	Three Months ended March 31,		Year ended December 31,		
	2014	2013	2013	2012	2011
	(dollars in thousands except share and per share data)				
Revenues .....	\$ 73,336	\$ 71,018	\$ 283,672	\$ 288,105	\$ 356,292
Cost of goods sold .....	43,275	48,206	206,311	211,049	255,466
Loss on firm purchase commitment .....	—	—	—	1,859	5,610
Total cost of goods sold .....	43,275	48,206	206,311	212,908	261,076
Gross profit .....	30,061	22,812	77,361	75,197	95,216
Operating expenses					
Sales and marketing expenses .....	9,498	9,797	35,227	37,437	38,689
General and administrative expenses .....	8,852	10,253	33,036	32,520	32,862
Research and development expenses .....	3,222	11,998	30,459	40,604	40,945
Proceeds from manufacturer .....	—	—	(8,876)	(34,614)	—
Impairment on land .....	—	—	6,406	—	—
Total operating expenses .....	21,572	32,048	96,252	75,947	112,496
Operating income (loss) .....	8,489	(9,236)	(18,891)	(750)	(17,280)
Interest expense .....	(10,560)	(10,711)	(42,915)	(42,014)	(37,658)
Interest income .....	8	42	104	252	333
Other income (expense), net .....	(414)	721	1,161	(44)	1,429
Loss before income taxes .....	(2,477)	(19,184)	(60,541)	(42,556)	(53,176)
Provision (benefit) for income taxes .....	(1,192)	628	1,014	(555)	84,082
Net income (loss) .....	\$ (1,285)	\$ (19,812)	\$ (61,555)	\$ (42,001)	\$ (137,258)
Net income (loss) per common share:					
Basic and diluted, historical .....	\$ (0.03)	\$ (0.39)	\$ (1.21)	\$ (0.84)	\$ (2.73)
Basic and diluted, pro forma(1) (unaudited) ..	\$ (0.07)	\$ (1.11)	\$ (3.41)	\$ (2.35)	\$ (7.68)
Common shares:					
Basic and diluted, historical .....	50,803,484	50,333,927	50,670,274	50,250,957	50,237,490
Basic and diluted, pro forma(1) (unaudited) ..	18,079,537	17,912,435	18,032,131	17,882,908	17,878,116
Pro forma as adjusted net income (loss) per common share(2) (unaudited):					
Basic .....	\$ 0.04	\$ (0.64)	\$ (1.89)		
Diluted .....	\$ 0.04	\$ (0.64)	\$ (1.89)		
Pro forma as adjusted common shares(2) (unaudited):					
Basic .....	27,338,796	27,171,694	27,291,390		
Diluted .....	27,807,177	27,171,694	27,291,390		

	Three Months ended March 31,		Year ended December 31,		
	2014	2013	2013	2012	2011
	(dollars in thousands) (unaudited)				

**Other Financial Data:**

Adjusted EBITDA(3) .....	\$16,018	\$4,750	\$47,359	\$56,212	\$79,978
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**As of March 31, 2014**

	Actual	Pro forma(1)	Pro forma as adjusted(4)
	(dollars in thousands)		

**Consolidated Balance Sheet Data:**

Cash and cash equivalents .....	\$ 17,010	\$ 17,010	\$ 12,181
Total assets .....	260,960	260,960	256,131
Total liabilities .....	497,736	497,736	389,736
Revolving credit facility .....	8,000	8,000	—
Current portion of long-term debt .....	—	—	—
Total long-term debt, net .....	399,098	399,098	299,098
Total stockholders' deficit .....	(236,776)	(236,776)	(133,605)

- (1) Pro forma information gives effect to our corporate reorganization, which will have no impact on our historical net income (loss) or balance sheet data, however, it will reduce the number of common shares and net income (loss) per common share due to the impact of a 1-for-0.355872 reverse stock split as described in “—Corporate Reorganization.”
- (2) Pro forma as adjusted net income (loss) assumes \$108.0 million of the net offering proceeds are used to redeem a portion of our Notes and pay down the outstanding amount of our revolving credit facility based on an assumed initial public offering price of \$13.50 per share (the midpoint of the price range set forth on the cover of this prospectus) and assumes a reduction of interest expense of approximately \$2.5 million, \$2.4 million and \$9.9 million for the three months ended March 31, 2014 and March 31, 2013 and the year ended December 31, 2013, respectively, related to such redemption and pay down, assuming that the offering, redemption, and the related application of net proceeds was completed on January 1, 2013. We also expect to pay a \$4.9 million premium upon the redemption of the Notes. The redemption premium expense has not been included in pro forma as adjusted net income (loss) per share due to the expense being a nonrecurring charge. Pro forma as adjusted net income (loss) per common share and number of common shares gives effect to our corporate reorganization immediately prior to the consummation of this offering and the sale of 9,259,259 shares of our common stock in this offering at an assumed initial public offering price of \$13.50 per share (the midpoint of the price range set forth on the cover of this prospectus).
- (3) Adjusted EBITDA is defined as EBITDA (GAAP net income (loss), plus interest expense, net, provision of income taxes, depreciation and amortization), further adjusted to exclude unusual items that management does not believe are indicative of its core operating performance. Adjusted EBITDA is used by management to measure operating performance and by investors to measure a company's ability to service its debt and meet its other cash needs. Management believes that the inclusion of the adjustments to EBITDA applied in presenting Adjusted EBITDA is appropriate to provide additional information to investors about our performance across reporting periods on a consistent basis by excluding items that it does not believe are indicative of its core operating performance. See “Non-GAAP Financial Measures.”

ended December 31, 2013 and 2012 and the three months ended March 31, 2013, respectively, primarily relating to our strategic shift from in-house R&D to an external partnering model of R&D.

- (4) Pro forma as adjusted information gives effect to our corporate reorganization, including the related 1-for-0.355872 reverse stock split (see “—Corporate Reorganization”), the termination of our Advisory Services and Monitoring Agreement, dated as of January 8, 2008, which we will terminate prior to the consummation of this offering and pay a \$6.25 million termination fee in connection therewith (see “Certain Relationships and Related Person Transactions—Advisory and Monitoring Services Agreement”), the receipt of net proceeds of \$114.3 million from our capitalization to reflect the sale of 9,259,259 shares of our common stock in this offering by us at an assumed initial public offering price of \$13.50 per share (the midpoint of the price range set forth on the cover of this prospectus) after deducting underwriting discounts and commissions and estimated offering expenses payable by us, and the application of \$112.9 million of the net proceeds from this offering to reduce our indebtedness, including a \$4.9 million redemption premium, as described under “Use of Proceeds.”

## CAPITALIZATION

The following table sets forth our cash and cash equivalents and our capitalization as of March 31, 2014:

- on an actual basis;
- on a pro forma basis to give effect to our corporate reorganization immediately prior to the consummation of this offering; and
- on a pro forma as adjusted basis to give effect to (1) our corporate reorganization, (2) payment of the termination of our Advisory Services and Monitoring Agreement, dated as of January 8, 2008, which we will terminate prior to the consummation of this offering (see “Certain Relationships and Related Person Transactions—Advisory and Monitoring Services Agreement”) and (3) the sale of 9,259,259 shares of our common stock in this offering by us at an assumed initial public offering price of \$13.50 per share (the midpoint of the price range set forth on the cover of this prospectus) after deducting underwriting discounts and commissions and estimated offering expenses payable by us, and the application of the net proceeds from this offering to reduce our indebtedness as described in “Use of Proceeds.”

The following table should be read in conjunction with “Use of Proceeds,” “Selected Consolidated Financial Data,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” “Description of Capital Stock,” and our financial statements and notes thereto included elsewhere in this prospectus.

	As of March 31, 2014		
	Actual	Pro forma(1)	Pro forma as adjusted(2)
	(dollars in thousands)		
Cash and cash equivalents	\$ 17,010	\$ 17,010	\$ 12,181
Long-term debt, including current portion:			
Revolving credit facility(3)	\$ 8,000	\$ 8,000	\$ —
Senior notes(4)	399,098	399,098	299,098
Total long-term debt, including current portion	407,098	407,098	299,098
Stockholders’ (deficit) equity:			
Common stock (\$.001 par value, 60,000,000 shares authorized, 50,821,658 shares issued and 50,807,503 shares outstanding, on an actual basis; \$.01 par value, 250,000,000 shares authorized, 18,080,944 shares issued and outstanding, on a pro forma basis; and \$.01 par value, 250,000,000 shares authorized, 27,340,203 shares issued and outstanding, on a pro forma as adjusted basis)	51	181	273
Treasury stock (14,155 shares, at cost, on an actual basis; zero shares, at cost, on a pro forma and pro forma as adjusted basis)	(106)	—	—
Additional paid-in capital	106,082	105,846	220,050
Accumulated deficit	(342,138)	(342,138)	(353,263)
Accumulated other comprehensive income	(665)	(665)	(665)
Total stockholders’ (deficit) equity	(236,776)	(236,776)	(133,605)
Total capitalization	\$ 170,322	\$ 170,322	\$ 165,493(5)

- (1) Pro forma information gives effect to our corporate reorganization, including the related 1-for-0.355872 reverse stock split, described in “Prospectus Summary—Corporate Reorganization,” which had no impact on our historical total capitalization.
- (2) Pro forma as adjusted information gives effect to our corporate reorganization, including the related 1-for-0.355872 reverse stock split, described in “Prospectus Summary—Corporate Reorganization,” payment of the \$6.25 million termination fee of our Advisory Services and Monitoring Agreement, the receipt of \$114.3 million net proceeds from the sale of our common stock in this offering by us, after deducting underwriting discounts and commissions and estimated offering expenses, and the application of \$112.9 million of the net proceeds from this offering to reduce our indebtedness, including a \$4.9 million redemption premium, as described in “Use of Proceeds.”